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HOUSEKEEPERS' CHAT

Wednesday, January 5, 1938

(FOR BROADCAST USE ONLY)

Subject: "BEAN NEWS." Information from the Office of Experiment Stations, United States Department of Agriculture.

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The housewife who knows beans, dried beans, at least, must have been keeping up with the news from the State experiment stations. For though beans are an old and very common food, new facts about cooking them have only recently come to light at the Nebraska Station where scientists have been studying the Great Northern and navy varieties of bean, and at the New Mexico Station where the pinto bean has been having attention. (The pinto bean, you know, is that spotted red-dish bean which is a "frijole" to any Mexican.) What the scientists at these 2 Stations have found out about beans ought to be of interest whether you have a New England taste for Saturday-night baked beans and brown bread, or a Southwestern fondness for chili con carne, or an everyday American appetite for just plain pork and beans.

The most important single factor in cooking beans is the hardness of the water. That's what the New Mexico investigators report as the result of their study. (And that may explain why some housewives have a habit of saving rain water for cooking beans.) The New Mexican scientists don't say anything about rain water, but they do advise using soft water if you can, and if not, softening hard water somewhat by boiling it rapidly for 20 to 30 minutes before putting on the beans. This boiling will settle out some of the calcium and magnesium salts that make the water -- and also the beans -- hard.

The Nebraska investigators explained this hard-water difficulty in cooking beans by reporting that these mineral salts may harden and toughen the skin of the bean so that it prevents the bean from absorbing water and cooking tender. They found that bean skins may be naturally hard if they contain a good deal of calcium. Or they may become hard during cooking or storage.

You may be interested to know that molasses and tomato juice as well as hard water may harden beans during cooking. You see, molasses often contains considerable calcium. So old-fashioned Boston baked beans, flavored with molasses, may harden from the calcium in the molasses. The Nebraska people advise adding molasses toward the end of the baking after the beans have cooked tender. And they advise adding tomato toward the end of the cooking, too. The acid in the tomato also has a hardening effect. As for ordinary table salt -- or sodium chloride to the chemists -- in itself it has no effect one way or the other, but as it may contain some magnesium or calcium compounds, the scientists advise adding it last.

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Baking soda, on the other hand, tends to soften beans and shorten the cooking time. Both the New Mexico and the Nebraska studies showed that baking soda in the water that beans are soaked or cooked in helps make the beans tender and shortens the time needed for cooking. But too much soda damages the flavor and the color of the beans. So the New Mexico investigators advise soaking but not cooking beans in soda water. They report best results from soaking beans in a hot solution of 1 and a half teaspoon of soda to 5 cups of water and then pouring off the soda water and using plain water for cooking. The Nebraska workers, on the other hand, advise using a very small amount of soda in both the soaking and the cooking water -- an eighth teaspoon of soda to a pint of water, which shortens the cooking time considerably yet doesn't affect the taste or the color of the beans to any extent.

The New Mexico station reports that the primitive Mexican way of cooking pinto beans was to put beans and water together in an earthen pot and cook from 5 hours to all day until tender, adding salt, chili, and other seasonings last. But the recent studies at both stations show that the more modern way of soaking before cooking saves time and fuel. The Nebraska Station reports that the best temperature for soaking beans is 120 degrees Fahrenheit -- lukewarm. At this temperature beans will take up their own weight of water in 5 or 6 hours, but with colder water they need longer soaking. The New Mexico Station favors hot water for soaking and reports that pinto beans become plump in 10 to 12 hours of soaking.

As for cooking methods, boiling is the simplest. And both stations report best results from gentle boiling in closely covered heavy kettles. Nebraska found that by soaking beans first and using soda, the cooking time might be as short as an hour and a quarter. New Mexico found at least 2 hours necessary for boiling beans in soft water containing no soda.

Both stations tried cooking beans in a pressure cooker and both reported the results unsatisfactory. Cooking under pressure does save time and fuel, but seems to give beans an unappetizing color and flavor.

As for baking, the Nebraska station found that most recipes for baked beans recommend an unnecessarily long time in the oven. Most recipes call for long soaking, then parboiling, and finally baking in a slow oven for 8 or 12 hours. This is all very well on a coal range that is hot all day. But with an electric or gas range, methods that save fuel are desirable. The Nebraska investigators find that higher oven temperatures, such as 400 or 450 degrees Fahrenheit, gave very satisfactory baked beans in a short time, but required more water (4 cups water to one of dry beans) and gave more of a crust on the surface of the beans.

The Nebraska study also showed that storage rather than age may affect the cooking of beans. The tests showed that beans kept best in a tight jar in a cold but not freezing place -- that is, around 45 degrees Fahrenheit.
